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Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A rolling regeneration diesel particulate filtering process that reuses NO produced in the process to generate additional amounts of NO₂, comprising:

flowing diesel engine combustion exhaust through a filter system comprising a first section and a second section, and wherein the first section is positioned upstream of the second section with respect to the flow direction of the exhaust gas, and wherein the first section includes a foam constructed and arranged to trap carbon-based particulates in the exhaust, and a first catalyst carried by the foam to promote the conversion of NO in the exhaust from the diesel engine to NO₂, and to promote the reaction of at least a portion of the particulates trapped in the foam with NO₂ to form CO and NO, and wherein the first catalyst carried by the foam further promotes the oxidation of CO to CO₂, and the oxidation of NO, generated by the reaction of NO₂ with carbon, to generate additional NO₂, and wherein the second section includes a wall flow filter having at least one through hole cell formed therein running the longitudinal length of the wall flow filter, and the wall flow filter being constructed and arranged to trap particulates in the exhaust and to promote the reaction of NO₂ and C to produce NO and CO.

2. (original) A process as set forth in claim 1 wherein the foam comprises a ceramic foam including Al₂O₃.

3. (currently amended) A process as set forth in claim 2 wherein ~~the ceramic foam further includes ZrO₂~~ the second section includes only a single through hole cell formed therein running the longitudinal length of the wall flow filter.

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4. (original) A process as set forth in claim 1 wherein the foam comprises a ceramic foam including ZrO_2 .
5. (original) A process as set forth in claim 1 wherein the first catalyst comprises platinum.
6. (original) A process as set forth in claim 1 wherein the first catalyst comprises platinum carried by the foam in a loading of at least 25 grams per cubic foot of foam.
7. (original) A process as set forth in claim 1 wherein the foam has a porosity ranging from 80% to 90%.
8. (original) A process as set forth in claim 1 wherein the foam includes 10 to 60 pores per inch.
9. (original) A process as set forth in claim 1 wherein the wall flow filter includes 25 to 300 cells per square inch of cross-sectional area of the wall flow filter.
10. (currently amended) A process as set forth in claim 1 wherein the filter system further includes a housing, and wherein the first and second sections are carried in the housing and wherein the second section further comprises a plurality of through hole cells formed therein running the longitudinal length of the wall flow filter.
11. (original) A rolling regeneration diesel particulate filter system comprising:
a first section and a second section, and wherein the first section is positioned upstream of the second section, and wherein the first section includes a foam constructed and arranged to trap carbon-based particulates in diesel engine exhaust flowing through the filter,

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and a first catalyst carried by the foam to promote the conversion of NO in the diesel engine exhaust to NO₂, and the first catalyst being designed to promote the reaction of NO₂ with at least a portion of the carbon-based particulates trapped by the foam to form CO and NO, and wherein the first catalyst carried by the foam further promotes the oxidation of CO to CO₂, and the oxidation of NO, generated by the reaction of NO₂ with carbon, to generate additional NO₂, and wherein the second section includes a wall flow filter having at least one through hole cell formed therein running the longitudinal length of the wall flow filter, and the wall flow filter being constructed and arranged to trap particulates in the diesel engine exhaust flowing through the wall flow filter and to promote the reaction of NO₂ and C to produce NO and CO.

12. (original) A system as set forth in claim 11 wherein the foam comprises a ceramic foam including Al₂O₃.

13. (currently amended) A system as set forth in claim 12 wherein ~~the ceramic foam further includes ZrO₂~~ the second section includes only a single through hole cell formed therein running the longitudinal length of the wall flow filter

14. (original) A system as set forth in claim 11 wherein the foam comprises a ceramic foam including ZrO₂.

15. (original) A system as set forth in claim 11 wherein the first catalyst comprises platinum.

16. (original) A system as set forth in claim 11 wherein the first catalyst comprises platinum carried by the foam in a loading of at least 25 grams per cubic foot of foam.

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17. (original) A system as set forth in claim 11 wherein the foam has a porosity ranging from 80% to 90%.

18. (original) A system as set forth in claim 11 wherein the foam includes 10 to 60 pores per inch.

19. (original) A system as set forth in claim 11 wherein the wall flow filter includes 25 to 300 cells per square inch of cross-sectional area of the wall flow filter.

20. (currently amended) A system as set forth in claim 11 ~~further comprising a housing, and wherein the first and second sections are carried in the housing wherein at least a~~ portion of the wall flow filter surrounds a portion of the foam.

21. (original) A rolling regeneration diesel particulate filtering process that reuses NO produced in the process to generate additional amounts of NO₂, comprising:

flowing diesel engine combustion exhaust through a first section of a filter system and thereafter flowing the exhaust through a second section of the filter system, and wherein the first section includes a foam constructed and arranged to trap carbon-based particulates in the exhaust, and a first catalyst carried by the foam to promote the conversion of NO in the exhaust from the diesel engine to NO₂, and to promote the reaction of at least a portion of the particulates trapped in the foam with NO₂ to form CO and NO, and wherein the first catalyst carried by the foam further promotes the oxidation of CO to CO₂, and the oxidation of NO, generated by the reaction of NO₂ with carbon, to generate additional NO₂, and wherein the second section includes a wall flow filter having at least one through hole cell formed therein running the longitudinal length of the wall flow filter, and the wall flow filter being constructed and arranged to trap particulates in the exhaust and to promote the reaction of NO₂ and C to produce NO and CO.

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22. (canceled)
23. (canceled)
24. (canceled)
25. (canceled)
26. (canceled)
27. (canceled)
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31. (canceled)
32. (canceled)
33. (canceled)
34. (canceled)

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Amendments to the Drawings:

The attached sheets of drawings includes changes to Figures 3-6. These sheets, which includes Figures 1-7, replace the original sheets including Figures 1-7. Figures 3-6 have been amended to designate the rear face of the foam as numeral 204.

Attachments: Replacement Sheets
Annotated Sheets Showing Changes